In re Application of: MARTIN, Allen
Application No.: 10/657,318

Atty. Docket No.: PHDL06525-006

Art Group: 3748 Examiner: Trieu, Thai Ba

Amendments to the Specification

Please replace the paragraph beginning at page 6, line 17 with the following rewritten

paragraph:

--- It is an object of the present invention to provide an external drive

supercharger that provides increased flow and higher pressures. The external drive

assembly for use with an impeller of a supercharger of this invention comprises a

multibelt pulley adapted to receive a drive source; an impeller pulley drivingly

coupled to the impeller, an external drive belt having at least one rib coupled to the

multibelt pulley to drive the impeller pulley; an adjustable idler engagingly connected

to the external drive belt; wherein the impeller pulley and the multibelt pulley engage

with the at least one rib of the external drive belt. Preferably, the adjustable idler is

spring loaded. More preferably, an internal external drive assembly directly couples

the impeller pulley to the impeller. ---

Please replace the paragraph beginning at page 14, line 6 with the following rewritten

paragraph:

--- The impeller pulley 7 is typically made from steel, aluminum or composite

materials. The impeller pulley 7 is adapted to couple to a drive source 5. The

impeller pulley 7 is coupled to the impeller 20. The external drive belt 9A is coupled

to the impeller pulley 7 and the multibelt pulley 8 so that the external drive belt 9A

is driven by the multibelt pulley 8 which, in turn, is driven by the motor belt 9 and

the motor pulley 6. In the preferred embodiment, the impeller pulley 7 and the

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portion of the multibelt pulley 8 coupled to the drive belt 9A are cylindrically shaped wheels with each having at least one groove 60 and 62 around their perimeter edge. An example of a preferred embodiment is shown in Figures 1a and 9. Preferably, the number of grooves 60 and 62 of the impeller pulley 7 and the portion of the multibelt pulley 8 coupled to the drive belt 9A are equivalent. Also, the pulleys 7 and 8 may contain recessed areas 46 to reduce weight of these pulleys and inertial forces related thereto. Figures 1a and 9 show the external drive belt 9A with ribs 64, and the external drive belt is shown engaged to the pulleys 7 and 8 as shown in these figures. Preferably, the multibelt pulley 8 which is connected to the external drive belt 9A is larger in diameter than the impeller [drive source] pulley 7 in order to provide a gear up ratio (i.e., overdrive gear ratio). For example, the preferred gear up ratio for the present pulleys 7 and 8 is at least 3 to 1 and may typically be 5 to 1 or higher. However, the gear up ratio for conventional prior art superchargers is typically much greater. Preferably, the surfaces of the impeller pulley 7 and the multibelt pulley 8 are cryogenically treated and/or hand anodized to strengthen the pulleys and to provide a non-porous surface for each of these pulleys. The nonporous surfaces of pulleys 7 and 8 provide a very smooth surface resulting in less friction when engaged to the external drive belt 9A thereby resulting in longer life for the external drive belt 9A. ---

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## Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

## **Listing of Claims:**

Claim 1 (Original): An external drive assembly, having secondary overdrive components, for use with an impeller of a supercharger comprising:

a multibelt pulley adapted to receive a drive source using a motor belt;

an impeller pulley drivingly coupled to the impeller;

an external drive belt having at least one rib coupled to the multibelt pulley to drive

the impeller pulley;

an adjustable idler engagingly connected to the external drive belt;

wherein the impeller pulley and the multibelt pulley engage with the at least one rib

of the external drive belt.

Claim 2 (Original): The external drive assembly according to claim 1 wherein the adjustable

idler is spring loaded.

Claim 3 (Original): The external drive assembly according to claim 1 further comprising an

internal drive assembly for coupling the impeller pulley to the impeller.

Claim 4 (Original): The external drive assembly for use with a supercharger according to

claim 2 wherein the external drive belt is selected from the group consisting of: serpentine

belts, polydrive belts or toothed belts.

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Claim 5 (Original): The external drive assembly for use with a supercharger according to

claim 4 wherein the multibelt pulley engages at least the external drive belt and a motor belt.

Claim 6 (Original): The external drive assembly for use with a supercharger according to

claim 5 wherein the multibelt pulley is adapted to receive a rotatable shaft of an existing

engine component.

Claim 7 (Original): The external drive assembly for use with a supercharger according to

claim 6 wherein the multibelt pulley replaces the pulley of the existing engine component.

Claims 8-28 (Cancelled).

Claim 29 (Currently Amended): A method of making a supercharger comprising the steps

of:

providing a impeller an impeller having a body with a base and an air intake end

and further having precision made air vanes attached to the body wherein the

precision made air vanes each extends from the base to the air intake end and

wherein the precision made air vanes have air sealing surfaces;

positioning the impeller in a precision made inner area of a volute chamber

housing;

precisely spacing the air sealing surfaces of the precision made air vanes relative

to the precision made inner area;

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coupling an external drive assembly, comprising secondary overdrive

components, directly to the impeller for driving and rotating the new-impeller; and

coupling the external drive assembly to a drive assembly mount.

Claim 30 (Original): The method of making a supercharger according to claim 29 wherein

the coupling the external drive assembly step further comprises the steps of:

providing a multibelt pulley adapted to couple to a drive source;

coupling an impeller pulley to the impeller and to the drive assembly mount, and

coupling an external drive belt to the multibelt pulley and the impeller pulley wherein

the external drive belt is being driven by the multibelt pulley to drive the impeller

pulley.